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MOTO FILM FEST

ART FOR BIKE'S SAKE

Motorcycling is just about as good as it gets for a movie topic. In the decades since motorcycles and film have coexisted, there have been some magnificent pieces made—*Easy Rider*, *Faster*, and *On Any Sunday* marking just a few of the truly great ones.

Thanks to the proliferation of affordable cameras, editing tech, and ease of publishing, we have a new era of creative people using motorcycles to tell stories of life, love, and adventure.

I was honored this year to be a judge at the third annual Motorcycle Film Festival in Brooklyn and screened about 30 films both short and long. The MFF was first conceived by Corinna Mantlo and Jack Drury, with our Custom & Style Editor Paul d'Orleans thrown in the mix as chief judge.

One of the most refreshing things was the number of women enthusiasts in the audience and as key parts of the festival itself, as well as makers of films. It was a great example of humans who happen to be women enjoying and enriching a sport they never should have been excluded from in the past.

In fact, my personal favorite piece from the fest was directed by a young woman—*Two-Stroke: A Love Story* about mopeds and moped life. I'm a secret moped lover because I got started riding on the road as a 14-year-old by buying a pair of Batavus HS-50 mopeds. Director Jacqui Carriere is a 22-year-old film student at Emerson College who was also a key player in this documentary/narrative about a small moped shop in the Boston area—a totally charming piece that touches on the basic wonder of two-wheeled movement and the community surrounding it.

Best of Fest went to *Out of Nothing*, a feature-length documentary directed by Chad DeRosa about four working men in the Pacific Northwest who spend pretty much all their free time and energy on prepping for Bonneville. It's beautifully

put together and gorgeous to watch. It's set to air on ESPN, so watch for it.

The week of screenings began with *Easy Rider*, which was magnificent to see on a big screen and underlined one of the main reasons you'd go to a theater instead of watching on your phone or computer. Filmmaker and activist Cliff Vaughs and bike builder Larry Marcus were in the audience. Both had worked on *Easy Rider* before being fired after some initial filming, and both had been key in the building of Captain America and the Billy Bike, though neither were given any credit for this until recently. This was the first time Vaughs, now in his 70s, had ever seen *Easy Rider*, and it was as much fun for me to watch him watch the film as it was to experience it myself.

Said d'Orleans, "Like Cliff, I'd never seen *ER* on a big screen. It drove home how crucial those bikes were to the success of that film; the shots lingering over those choppers were as evocative as a European nude scene. There was electricity in the room. Everyone present knew Cliff had never seen *ER*, so we all had new eyes with him."

Vaugh's post-screen comments centered around how wonderful motorcycling was and his three cross-country trips on a Harley-Davidson chopper, the final scene of the movie based around his experience of being shot at from a moving pickup truck for being a black man on a chopper riding through the South.

The high quality of the finalists had judges (including custom builder and film star himself Shinya Kimura) and show organizers backstage just minutes before the final awards ceremony debating which films would win. For a full list of the movies that won and background on the event, visit motorcyclefilmfestival.com.

MARK HOYER
EDITOR-IN-CHIEF



**THIS
MONTH'S
STATS**

70

APPROXIMATE
NUMBER OF FILMS
SUBMITTED TO
MFF 2015



nine

TIMES I EXCEEDED
100 MPH ON THE
NINJA H2 IN 13 MILES

212

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KICKSTART THE CONVERSATION



CW nailed it in October with incomparable motojournalistic excellence from Don Canet and Peter Jones. “Project 156” and “Not Sturgis 2015” were benchmark quality writing, and the rest of the issue was frosting on a very tasty cake. I enjoyed it so much that I went for a ride to bring me back to everyday reality!

JOHN HAZELTON
CHESTERFIELD, VA

VICTORY: BUILD 156

Anyone who has any respect for how difficult it can be to properly engineer, build, and install just the custom pieces for a motorcycle should be seriously impressed with the Victory Project 156. I was mesmerized studying the two-page layouts of the bike in the October issue. The level of design, build techniques, and final fitment is nothing short of brilliant. And that’s just half the battle. Getting a bike to run and handle properly is another journey unto itself.

It’s one thing to build a custom “art” bike or modify the snot out of an existing model. But the 156 is something that in a slightly smoothed-over version could easily be imagined as a road-going production bike dicing it up with the best offerings out there. It’s the type of motorcycle that, if available, might even cause this enthusiast to part with several bikes from the stable in order to acquire one very unique machine.

RANSE PARKER
CYCLEWORLD.COM

PISSED, WITH WARM REGARDS

I’m at the airport and just bought your magazine...as usual. How do you write an article called “Big Fun” and omit a Ducati Monster? Rat bastards! An article about cool and power without sexy...

Don’t worry. I’ll still buy your magazine next month. But you pissed me off.

Warm regards!

TONY SILVEUS
CYCLEWORLD.COM

We were waiting for the Monster 1200R and also had to omit the Tuono V4 Factory (page 46). Don’t worry: More big fun to be had. Just keep going back to the airport.



Comments? Suggestions? Criticisms?
Write us at intake@cycleworld.com.

I SCREAM, WE SCREAM!!

October 2015 issue: The Yamahauler!! Awesome van. Dirt Quake!! Sturgis!! And the design of motorcycle gas tanks!! Oh yeah, Project 156!! The love of motorcycles!!

JEFF GRIESBACH
CYCLEWORLD.COM

NOT STURGIS

After every page of “Not Sturgis 2015” by Peter Jones, I had to return to the title page to see if it had been written by Peter Egan. Great story. Don’t ever get rid of Mr. Egan, but if it happens, you have another Peter that can surely take his place. Both are great writers, and you are lucky to have them.

HAL HUTCHINSON
EVART, MI

Sometimes it takes age to round out a fella and make him a biker, a romantic, and a good writer. Seems Jones has arrived at that point. His story of the Black Hills was really well written,

insightful, and entertaining. He even managed to use “anthropomorphic” in a sentence. Pass along my compliments.

I’ve been a Cycle World subscriber for many years, and this is one of the best damn articles ever.

MIKE BARNHARDT
CONCORD, NC

For the record, Jones actually used the word “anthropomorphizing.”

Please thank Mr. Jones for his article covering Sturgis’ surrounding area—one of my favorite locales when not “in season.” However, I was more captured by his sense of Bond-like style. Where did he score the cowboy-like duds? Me likey!

SEAN O’CONNOR
CYCLEWORLD.COM

Jones wore a waxed-cotton Vanson Trophy jacket, Ugly Bros USA Motorpool armored jeans, Shoei QWest helmet, Racer Gloves Guide, and Dainese Street Rocker D-WP boots. Cowboy swagger not included.

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Ignition

THE RIDE STARTS HERE



➤
Constant evolution is the name of the game in the motocross world. This year's crop of 450cc MXers includes six serious players, all of whom have been competitive in SX and MX in 2015.

HONDA CRF450R

2011

A GOOD YEAR: The most recent time that Team USA won the MX of Nations (with riders Ryan Dungey, Blake Baggett, Ryan Villopoto).

76

VICTORIES:

This is the chart-topping number of all-time 250cc and 450cc wins by Ricky Carmichael in Pro Motocross.

HONDA CRF450R



HUSQVARNA FC 450



KAWASAKI KX450F



KTM 450 SX-F



SUZUKI RM-Z450



YAMAHA YZ450F

**CW FIRST RIDE****BRAAAAAAP!**2016 Open-class motocross roundup **By Brendan Lutes**

As manufacturers compete to introduce the next great advancement in motocross technology, dirt bikes have been evolving at an almost exponential rate. After years of steady progression and improvement, today's 450cc four-strokes are the most technologically advanced motocross bikes to ever become available to the public. With vast performance enhancements now available on the new 2016 machines, it's easy to imagine that they were most certainly yesterday's full-factory works bikes—each machine is that good. But when you look closely at all the bikes, each one begins to show its strengths and weaknesses and the reasons for why it was engineered in a particular way.

With every bike boasting a laundry list of advanced technology that ranges from air forks to launch control to variable on-the-fly ignition mapping buttons, it's easy to get confused by it all. When you break down each bike for what it is, though, it becomes a little easier to digest, which is why we've decided to take each bike on a case-by-case basis, offering you the pros and cons of this year's crop of 450cc four-stroke machines.

HONDA CRF450R

After making major changes to the CRF450R in 2015, Honda elected to leave the 2016 model relatively unchanged aside from a 5mm-longer

fork, a new shock spring, a new link arm, and improved shock settings. When combined, the fine-tuning helps to further improve the overall handling of the CRF.

The longer fork and new link provide a change in the ride attitude, allowing the bike to handle better down rough straights. But while the overall comfort was improved, the turning prowess was slightly hindered. To alleviate this, we switched from 105mm of sag to 103 and also went stiffer on the Honda Progressive Steering Damper. These tweaks allowed the bike to settle into corners better, giving us more confidence to remain on the throttle longer. Throughout our testing, we found the suspension to be slightly soft, which we fixed by going in two clicks on the compression on the front and rear of the bike.

In the engine department, the power isn't as strong or abundant as other bikes, but we really enjoyed the linear power delivery and the three-map selection switch that can be toggled through on the side of the track.

Overall, if you liked the performance of the 2015 CRF450R, you're going to gel with the '16 model. The small changes have helped to push the bike further in the correct direction.

HUSQVARNA FC 450

This year marks the beginning of Husqvarna truly separating itself from KTM and becoming a stand-alone brand. The 2016 FC 450 features



HUSQVARNA FC 450

numerous changes to not just the bodywork and ergonomics but also the suspension, chassis, and engine. Husqvarna focused on trimming weight from the bike. Since the engine and chassis are both lighter, this adds up to a significant weight reduction.

On the track, the new FC 450 is a blast to ride. When compared to its cousin, the KTM 450 SX-F, the FC 450's suspension performs better in part due to minor chassis differences between the two bikes. The WP 4CS fork holds up on hard hits and rough chop, providing a plush and controllable ride. In turns, the FC 450 performs just as well, diving into deep ruts with ease and going exactly where the rider wants. The new bodywork also makes it easy to move around on the bike without any hang-ups.

The motor is a combination of hard-hitting and controllable power, as it has a strong low-end grunt that then progresses into great top-end pull. And like the KTM, the FC 450 comes with a Magura hydraulic clutch and the always-strong Brembo brakes.

For a second-year offering, Husqvarna has done an exceptional job of improving the bike versus the 2015 model.

KAWASAKI KX450F

The KX450F boasts a new chassis, engine, and modified suspension settings. On the track, the new bike is a vastly different machine than the 2015 version. Last year, nearly every test rider loathed the Showa Triple Air Fork, but for 2016, that isn't the case. The new chassis has done an exceptional job at improving



KTM 450 SX-F

the overall performance and feel of the Showa fork. And throughout our testing of the bike, we didn't make any major tweaks aside from a few minor clicker and air-pressure adjustments to stiffen up the feel of the fork. Additionally, the new chassis gave the bike a lighter, more nimble feel in corners, down straights, and in the air.

The improved engine also results in some performance gains. The power comes on strong right off the bottom and continues to pull into the top. Kawasaki is also offering—for the first time—a handheld Kawasaki Accessory FI Calibration Kit, making EFI adjustments a breeze.

As a package, the KX450F is one of the best bikes in the class, offering solid suspension, predictable handling, and a very strong motor.

KTM 450 SX-F

The KTM 450 SX-F got a major overhaul for 2016, receiving changes to the suspension, chassis, and engine. Key upgrades include a new frame, subframe, and swingarm, which give the bike new flex characteristics and improved handling. The engine also saw notable changes aimed at improving power and controllability.

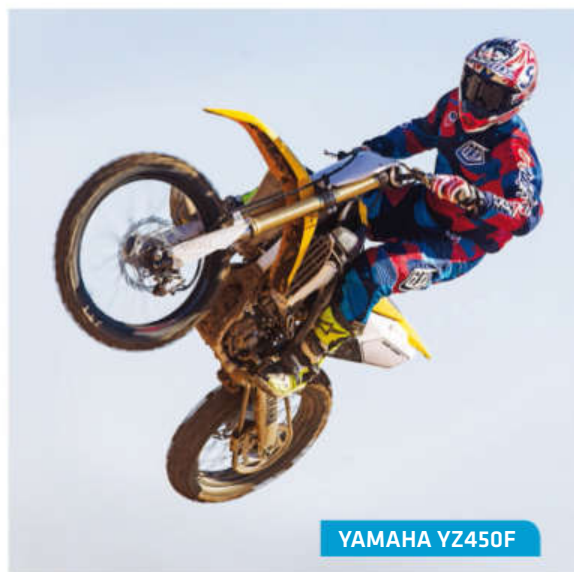
On the track, the '16 KTM is a marked improvement over the '15 model. The new frame and suspension settings give the bike a much lighter feel without hindering handling. It tracks straight and turns remarkably well. For faster or heavier riders, though, the fork and shock are set up a little too soft, as we found the bike bottomed out hard on big



KAWASAKI KX450F



SUZUKI RM-Z450



YAMAHA YZ450F

landings and the front end dived under heavy braking.

The motor on the 450 SX-F is very good. Previous model years have been extremely fast but, at times, difficult to control. The '16 machine has a smooth, yet strong, power delivery that hits hard on the bottom and continues to pull into the top-end. KTM also added Launch Control, allowing the 450 SX-F to come off the line in a straighter more controllable fashion.

When all of this is combined with KTM's excellent durability, hydraulic clutch, Brembo brakes, and ease of maintenance, the 450 SX-F is hard to beat.

SUZUKI RM-Z450

In 2015, the RM-Z450 underwent some major changes to the engine, chassis, and suspension, including an all-new Showa Triple Air Fork among other improvements. The bike was largely met with good reviews, and because of that, Suzuki decided to leave it untouched.

The engine on the '16 machine is one of the strongest and best pulling in the class. Right off the bottom, the power comes on strong and leads into a healthy top-end pull. Suzuki also makes available different ignition couplers that can be swapped out, creating three power

curves—lean, rich, and standard. The double-mode launch control also works very well.

Suspension-wise, we found the Zook to be a bit undersprung in both the front and rear, causing it to dive too far into the stroke when entering corners. Adding more air pressure to the fork, as well as a click on compression in the front and rear, however, helped to alleviate the bottoming and deflection problems we were having. In spite of the slight suspension woes we experienced, the RM-Z450 is one of the best-turning and best-handling bikes in the class. Even though it's the heaviest in this group, it feels light and flickable on the track.

The RM-Z450 is among the best of the 450cc division for power and handling.

YAMAHA YZ450F

The YZ450F is another 450 machine that received only minor massages for 2016. The alterations that it did get, however, made a noticeable difference in performance.

For '16, Yamaha changed the material of the upper motor mounts, beefed up the swingarm pivot point on the frame, and changed suspension valving by going to stiffer springs and less aggres-

sive valving. In conjunction with these changes, the triple clamps were changed from a 22 to a 25mm offset, giving the bike a steeper head angle to balance the new suspension settings.

On the track, these changes give the bike a very planted and confidence-inspiring feel down rough straights. In corners, however, while it is one of the best-turning YZ-Fs we've ridden in years, there is room for some improvement. The bike goes exactly where it's pointed, but in tight corners, it's still necessary for the rider to be aggressively over the front end. That stated, the Kayaba suspension is great, the traditional spring fork having smooth action and excellent bottoming resistance.

The motor on this latest YZ-F is also very strong. Minor changes to the intake and exhaust cams have given the bike a little more low-end punch without hindering the impressive top-end pull. Yamaha also added a new Launch Control System that works very well and remains engaged until you shift into third gear off the start.

With its excellent suspension, solid chassis, and strong motor, the new YZ will be no stranger to the podium in this very competitive class. **CW**

Make	Engine Type	Displacement	Seat Height	Fuel Capacity	Claimed Weight	Base Price
HONDA CRF450R	SOHC single	449cc	37.5 in.	1.7 gal.	243 lb. (wet)	\$8699
HUSQVARNA FC 450	SOHC single	449cc	37.8 in.	1.8 gal.	226 lb. (dry)	\$9399
KAWASAKI KX450F	DOHC single	449cc	37.8 in.	1.7 gal.	240 lb. (wet)	\$8799
KTM 450 SX-F	SOHC single	449cc	37.8 in.	1.8 gal.	225 lb. (dry)	\$9299
SUZUKI RM-Z450	DOHC single	449cc	37.6 in.	1.6 gal.	247 lb. (wet)	\$8749
YAMAHA YZ450F	DOHC single	449cc	38.0 in.	2.0 gal.	247 lb. (wet)	\$8590



F

olks who own Road Glide Ultras log more touring miles on their bikes than do any of Milwaukee's other customers, so it's

understandable that The Motor Company took a couple of extra years to bring this popular big tourer back to market. And based on my recent daylong ride of a new 2016 Ultra along the Columbia River, I'd say this new FL-based machine has been worth the wait.

Once you get accustomed to the dynamics of a bike with a claimed wet weight of 916 pounds, the new Road Glide gets under your skin. It gobbles up the miles with ease, its Twin-Cooled High Output 103 V-twin loping along in a relaxed manner at highway speeds, where I appreciated the improved aero comfort provided by the new frame-mounted fairing fine-tuned in Harley's Wichita wind tunnel.

Throttle response on the Lewis and Clark Trail along the Columbia River felt great, and the occasional pass would require dropping down to fifth gear but not always. The engine is rubber mounted, which allows some of the V-twin's character to come through without too much shake. Overall, I was

CW FIRST RIDE

2016 HARLEY-DAVIDSON ROAD GLIDE ULTRA

The long-distance workhorse is back
By Andrew Bornhop



helps make the new Ultra more comfortable over the long haul.

Besides standard cruise control and an inch-wider seat contoured for better support, the 2016 Road Glide Ultra benefits from LED headlights, linked brakes with ABS, and Project Rushmore updates such as One-Touch hard saddlebags, a Boom! Box 6.5GT color touchscreen (with GPS and Bluetooth), and a 100-watt sound system.

At \$25,699, the 2016 Road Glide Ultra is by no means cheap. But it now has the power, comfort, and sophistication to please riders who measure trips in states, not miles. **CW**

impressed with the Ultra's smoothness over a broad rev range. Harley, of note, says the liquid-cooled cylinder heads allow for a higher compression ratio and 10.7 percent more peak torque while also reducing radiant heat.

The new fairing, fitted with Dual Reflector Daymaker LED headlamps, a tall 13.5-inch windscreen, and triple split-screen venting that pressurizes the cockpit area, effectively eliminates head buffeting. Because it's frame-mounted, there's no ill effect on the steering. This bike has good straight-line stability, yet it's willing to bend into highway sweepers naturally.

At 6-foot-4, I appreciated the calm behind that screen, riding for most of the day with the top central vent open. When I experimented with the two large side vents flanking the headlights, I could sense that it was slightly calmer with them open, which also provided the rider with a glimpse of the asphalt whizzing by. What Harley calls "mid-frame air deflectors" are also employed below the fairing to deflect air up, right in front

of the 6-gallon fuel tank, to further pressurize the cockpit. In short, all this aero management worked well, allowing me to ride with the visor of my full-face Shoei popped open.

Because the frame-mounted fairing is a bit farther away from the rider than a traditional Harley Batwing, the 2016 Road Glide Ultra cockpit feels roomy. The handlebar, a slightly pulled-back design, has grips that are about 2 inches higher than those of the Road Glide. This upright riding position

IT NOW HAS THE POWER, COMFORT, AND SOPHISTICATION TO PLEASE RIDERS WHO
MEASURE TRIPS IN STATES, NOT MILES.



SPECS

2016 HARLEY-DAVIDSON ROAD GLIDE ULTRA

PRICE: \$25,699
ENGINE: OHV V-twin
DISPLACEMENT: 1690cc
SEAT HEIGHT: 29.7 in.
FUEL CAPACITY: 6.0 gal.
CLAIMED WET WEIGHT: 916 lb.

CW FIRST RIDE

2016 HARLEY-DAVIDSON SOFTAIL SLIM S AND FAT BOY S

Now with Screamin' Eagle 110 power **By Andrew Bornhop**

2016 HARLEY SOFTAIL SLIM S

2016 HARLEY FAT BOY S

What's always welcome in a cruiser? Yep, more power. Which is precisely what the Softail Slim S and Fat Boy S have received for 2016. Harley has significantly upped the performance quotient of these Softails by equipping them with the Screamin' Eagle Twin Cam 110ci V-twin, an air-cooled engine formerly reserved for the CVO models.

Harley had both bikes on hand at its 2016 press introduction, including an Olive Gold Denim Softail Slim S with a big white star on the tank. While this bike has a cool military look (reminiscent of the WLA military models from WW2, says Brad Richards, Harley's director of styling), I spent my time on a new Fat Boy S, a blacked-out model with disc wheels, dual shotgun mufflers, and the same Softail chassis with coil

shocks mounted below the transmission, out of sight.

As you'd expect from an engine with nearly 8 more pound-feet of torque than the air-cooled 103, the Fat Boy S felt snappy, with crisp throttle response and tons of grunt in seemingly any gear. It was so strong, in fact, that the Fat Boy S felt lighter than its claimed wet weight of 712 pounds would suggest. What's more, the hydraulic clutch had good feel through the beefy lever.

Although there's only one front brake on duty, the Fat Boy S didn't overwhelm that sole front binder on the downhill run from Mount Hood, where I appreciated the half-moon footboards, the decent cornering clearance, and the 5-gallon Fat Bob tank. This bike might be slammed, with a seat barely 2 feet off the pavement, but it likes to move. **CW**

2016 HARLEY FORTY-EIGHT

2016 HARLEY-DAVIDSON SPORTSTERS

Here's what you need to know about the 2016 Sportsters: All models have upgraded suspension designed to better cope with potholes and large bumps. A new cartridge-style fork is employed for improved comfort and control, while emulsion-style shocks with progressive-rate springs and threaded preload adjusters control the rear. Harley even provides an adjuster wrench, stowed beneath a seat that has been made significantly more comfortable with thicker foam. Sportster highlights for 2016 include a new Iron 883 (with significantly lighter aluminum wheels) and an updated Forty-Eight that looks especially stout with its massive 49mm fork tubes and burly 130mm front tire. **—AB**

2016 HARLEY IRON 883



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DECEMBER 1990

→ Superstars of 1991 gracing the cover included Honda's all-new CBR600F2 and the limited-production Kawasaki ZXR750R, the basis for Team Green's assault in AMA and World Superbike racing. An action photo in the lower right corner is yours truly aboard the Rob Muzzy-built ZX-7 that Doug Chandler rode to claim the '90 AMA Superbike title. As a side note, this was the very day that then Editor-in-Chief David Edwards offered me a full-time associate editor position—a job I couldn't refuse.

→ Indian Wars of 1991 covered the latest effort to revive the revered American marque with news of a limited-production \$100,000 re-creation of the 80ci Indian Chief built in 1952 and 1953, the last years of production for the legendary V-twin. This wouldn't be Indian's final chapter, however, as there were more upstarts to come prior to the historic brand finding a solid and secure home at Polaris.

→ *Race Watch* took to the streets of Steamboat

Springs, Colorado, for the ski community's annual AHRMA-sanctioned vintage races. The Rocky Mountain air saw a blend of bellowing classic four-stroke racers and the aroma of Castrol R as roadracers competed on a temporary street circuit, while vintage motocross, scrambles, and trials took place on the surrounding hillsides. Having competed in this bygone event myself, it remains on my personal list of all-time favorite racing experiences.

—Don Canet



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NEW IDEAS

NAUGHTY OR NICE?

Five new products that beat the hell out of a bag of coal **By Blake Conner**



1

MASTER CLASS

Don't overlook the master cylinder in your high-performance front brake setup. **Magura's HC3 radial master cylinder** (\$699) is designed to work with all modern ABS systems. A unique feature: The pump ratio can be quickly changed to any one of three settings mimicking three piston sizes, while the fold-away aluminum lever can be adjusted for span. → (800) 448-3876 magura.com

2

KEEP IT HANDY

Ever wish you had a variety of tools at your fingertips? **Leatherman's Tread multi-tool bracelet** (\$165 stainless, \$220 black) is what you need. It features 29 tools incorporated into its 10 links, including seven screwdrivers, five box wrenches, six hex drives, a bottle opener, and a cutting hook. Even better, it's an airline-travel-safe design. → (800) 847-8665 leatherman.com

3

ORGANIZE YOUR BED

Here's a great way to utilize your pickup truck's bed space more efficiently: **Leitner Designs Active Cargo System** (\$1,458–\$1,720). Available for full-size beds ranging in length from 5.5 to 8 feet—and for 2005 to 2015 Toyota Tacomas—this rack can be customized with various bolt-on accessories and compartments to meet your moto needs. → (949) 581-2904 leitnerdesigns.com

4

POV BARGAIN

Want to take point-of-view videos of your rides but are on a tight budget? **Vivitar's DVR 936 Wi-Fi LifeCam** (\$95) is an affordable solution to start you down the road to YouTube stardom. Capturing 1920 x 1080p video, the LifeCam has a fixed lens with three times digital zoom that offers a 160-degree field of view. Seven mounting accessories included. → (800) 592-9541 vivitar.com

5

HEAT SHIELD

If you like to travel light on your ADV or dual-sport machine, **Giant Loop** is one of our favorite makers of luggage and accessories. One new item that's fundamental to keeping your soft luggage from melting on a hot exhaust pipe is the oversize Hot Springs Grande Heat Shield (\$50). Affixes to most mufflers with two large hose clamps. → (458) 206-9113 giantloopmoto.com

— 2016 GSX-S1000 ABS —

Machina Nudus



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Fig. A – Three-mode Traction Control for any riding condition

Fig. B – Engine developed from 30 years of GSX-R performance

Fig. C – Powerful Brembo brakes with available ABS

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GSX-S1000



GSX-S1000 ABS



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CHOOSE THE BEST TEACHERS

SEARCH FOR GREAT SOURCES

Majority rules? Not when it comes to riding. By Nick Ienatsch



“Thank you for your opinion. Could you state your sources please?” That’s Marine Corps Major Mark

Thompson’s polite reply when he hears what might be bullshit.

Thompson’s question applies perfectly to our sport. New riders, especially women and kids, are inundated with riding advice. Every rider with more experience wants to help newbies along their learning curve. At a trackday, anyone who runs a quicker lap time wants to help those who are slower. Click on any bike-site forum and there will be questions

and perhaps even a section on riding techniques. It’s often an open forum, and you’ll find free advice given on almost every subject—even contradictory opinions on the same subject written by riders who ride the same model of bike.

“Could you state your sources please?”

Time in a sport does not necessarily qualify someone as an instructor.

“I’ve ridden successfully for 35 years,” is certainly a qualifier, but until we know the pace at which they ride and what they mean by “successfully,” we can’t be sure if they are to be trusted.

A 35-year riding veteran with only

35,000 miles on sunny days below the speed limit on roads he knows will not be a good source for trail-braking information. He’ll post: “Don’t trail brake. Set your entry speed early. This is what has made me a successful rider.”

Unfortunately, this might be read by an aggressive young man who just bought a ZX-10. He will twist the throttle a bit too much, rush the entry of a corner, and try to live with the 35-year veteran’s advice.

On the other side of the coin is the trackday rider who rides pretty quickly but runs off the track almost every session and crashes occasionally. His lack of consistency is overshadowed by his quickness, and he will tell a new trackday participant his insights to running a quick lap. “In turn two, grab the brakes at the ‘2’ board and flick it in right where the curb ends.” The new rider lifts weights at Gold’s Gym every night, and “grab” and “flick” mean something different to him—plus he’s on a slower bike. The verbs used, as well as the imprecision of the turn-in point, do this new rider a disservice.

We riders want to know the silver bullet to great riding. That desire has us searching everywhere, asking everyone. But listen: Motorcycling is not a “majority rules” sport. You must learn to ask Major Thompson’s question, even if it’s quietly to yourself. You can learn a lot from watching the best riders in your discipline, whether it’s Iron Butt rallying or adventure riding. When you find a rider you admire, ask him or her about your challenges.

My world is the sportbike side of our sport. It isn’t growing, despite increasing technology and great riders being able to carry an amazing pace with few mistakes. This has pushed me to write articles such as this, which I’ll end bluntly: Don’t ride like the majority rides. Ride like the best ride. **CW**



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SPORT TOURING T30 EVO

HERE IS HERE, THERE IS THERE

A MAP OF THE IN-BETWEEN BY PETER JONES

GPS is making me stupid. The problem is, when using it I'm never lost, but at the same time I have no idea where I am. GPS has eliminated that annoying necessity of being aware of reality.

When I use GPS, some lady I've never met tells me where to go. If I do what she says, I magically arrive at my destination. But no longer is there a landscape of identifiable locations between here and there, between where I began and where I end up. A destination is no longer a place with a comprehensible spatial relationship to a point of origin; it's a rabbit in a magician's hat. GPS is the magician. I'm a dupe in the audience. If I listen to the lady, eventually she shows me the rabbit. Geography is no longer relevant.

GPS teaches us to forget how to read a map. I used to be map literate. GPS is like having a book read to you, forever, encouraging you to forget that you ever knew how to read on your own. That's how GPS is making me stupid. I'm getting so stupid I'm unsure if I'm still spelling GPS correctly.

Since there's no way that I was willing to try to look at a little moving map while riding a motorcycle, I set a course, put my GPS (iPhone) into my jacket pocket, and listened to that lady through earphones. She knows how to get places and isn't a bad passenger, but I've a strong distaste for backseat drivers (riders) when I'm on a motorcycle. Anyway, she got me where I needed to go. But from that ride on, I've sworn off GPS, unless I'm in one of those four-wheeled devices.

In short, if the journey is more important than the destination, then GPS is worthless. The whole point of GPS is to sacrifice the ride to the efficiency of arriving. It's best used by truckers.

Without GPS, I can get lost. I like get-

ting lost. It's largely why I ride. But it's the kind of lost where I still generally know where I am. That's because, before I start riding, I look at a big piece of paper that has roads drawn all over it. It's a miniature, pretend version of where I am, allowing me to plan. So being lost is relative. Being lost only means that the ride might be longer than I'd initially guessed. That's generally a good thing. Basically, if someone hasn't asked for my passport, I'm still in the USA. Beyond that, there's not much I need to know.

I've also determined that I'm fortunate to be from a weird family of map lovers. We have conversations like this: "That turn on Route 90 in Cleveland by the waterfront is way too sharp. They need to fix that." Or, "You know when you're passing through Richmond, Virginia, on Interstate 95, and the Museum of the Confederacy is up on the hill to the west; that section is urban yet picturesque." My family is so spatially literate that you'd think we were raised by squirrels.

What a map can do that GPS can't is provide a picture to live on for a whole day, not just until you, "Turn left in a quarter mile." It gives an overview that can be memorized, referenced at lunch, discussed, modified. I like riding through it while carrying it in me.

There is, though, a sense of scale that maps must respect. Jorge Luis Borges once wrote of a map that an empire's cartographers created at the same scale as the empire itself. You had to arrive at a place to see it on the map. Conversely, I once headed west across America with a rider who said he'd brought a map, so I hadn't packed one. After a day of riding I asked to look at it. It was about 18 inches wide. Maine was on one side, California on the other. Just standing still, he and I were nearly everywhere all at once. *CW*



BY THE NUMBERS



THE ROUTE
NUMBER OF "AMERICA'S
LONELIEST HIGHWAY"

500

THE DISTANCE IN MILES
BETWEEN THE EDGE
OF NOWHERE AND THE
CENTER OF NOWHERE

X-Y+B = Z

X: HOW MANY MILES
MY BIKE CAN GO ON A
FULL TANK OF FUEL.

Y: HOW MANY MILES I'LL
RIDE BEFORE CHECKING
THE ODOMETER.

B: HOW FAR I'VE
RIDDEN SINCE PASSING
A GAS STATION.

Z: HOW FAR I'LL HAVE
TO WALK.

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FAILURE

AS USUAL, WE CAN BLAME IT ON ENTRAINED ALUMINUM OXIDE **BY KEVIN CAMERON**

Air-cooled cylinders (most especially two-stroke cylinders) and cylinder heads, plus all kinds of pistons, are especially liable to cracking because they run hot and are wracked by thermal as well as mechanical stress.

At Talladega in 1971, my rider Cliff Carr put our H1R Kawasaki on the front row. As I rolled the bike onto the grid, Steve Whitelock, Yvon DuHamel's mechanic, said, "What're you doing here?" For once, I had the presence of mind to say the right thing. "We belong here."

The physics of materials said otherwise in the race—a head cracked, allowing its copper gasket ring to blow. Here's how. As the engine runs, the center of the head is heated to high temperature by its exposure to combustion, but the outer parts of the head—its array of cooling fins—run much cooler because of the fresh air streaming over them. The center of the head expands a lot, but its outer parts, being cooler, expand less. Who wins? The hot center expands with such force that it slightly and permanently stretches the outer parts of the casting. When the engine is stopped and cools off, now the permanently expanded outer part can no longer allow the combustion chamber to quite return to its original dimension, thereby putting the center of the head in tension. Accumulated cycles of heat stretching and cooling into tension produce stress that will find and expand defects in the casting. Parts have lifetimes.

Today, advanced casting practice calls for non-turbulent mold filling from the bottom of the mold. This allows the film of aluminum oxide that always floats on molten aluminum to rise smoothly to the top of the mold rather than being entrained by a turbulent top fill. If entrained, bits of aluminum oxide become part of the casting, constituting numerous planes of weakness. It was customary to blame the crack

propensity of aluminum castings on "porosity," but entrained aluminum oxide is the likelier culprit.

For many years, it was standard practice to manufacture crankpins for pressed-together two-stroke crankshafts with a central bearing race of larger diameter than the ends of the pin, which pressed into crank flywheels. Where the smaller press-fit diameter became the larger diameter of the central bearing race, there was a step. Stress is concentrated at such steps—or at any sudden change of cross-section. The only crankpin breakages I have ever seen were of this type, and the crack that began the failure originated in this step. To make such cracking less likely, the original drawing surely showed the step as a smooth radius rather than a step with a sharp angle, but tools grow dull after a certain number of parts. Any imperfection in that "fillet radius" has the potential to become a crack.

It wasn't long before all manufacturers abandoned such stepped crankpins in favor of smooth, single-diameter pins.

Four-stroke engines with one-piece cranks also have fillets where their crankpins and main journals join the crank cheeks. The larger the radius of these fillets, the more resistant they are to cracking, and, just as with stepped crankpins, failures usually originate in the fillets. Several makers of motorcycle engines have had to take a deep breath, make the crankshaft fillet radii bigger, and narrow the bearing shells enough to make room, after having a rash of fillet cracking in a new model. It is also common to either roll or shot-peen fillets to place their material in compression. Any applied stress must first overcome this initial compression before any tension can be produced in the fillet. It is tensile stress that nourishes cracking.

In 2009, I saw Kenny Roberts across a hotel lobby in Indianapolis. I walked over and handed him a blue-anodized



BY THE NUMBERS



3

DAYTONA 200 WINS FOR KENNY ROBERTS (WOULD HAVE BEEN FOUR, IF NOT FOR A FAILED HEAD BOLT IN 1974)

3,600

PRICE OF A YAMAHA TZ750A, IN DOLLARS, IN 1974



26

RACE NUMBER OF CLIFF CARR'S KEVIN CAMERON-BUILT KAWASAKI H1R IN 1974

aluminum bolt. Without an instant's hesitation, he said, "One of those goddamned things cost me the win at Daytona in 1974."

Sixteen such bolts, plus six stainless cap screws, retained the two cylinder heads on the Yamaha TZ750A engine. Occasionally—*pop*—the head of a bolt would break off. Kenny's bike began to lose cooling water after such a failure, forcing him to accept second to Giacomo Agostini in the Daytona 200.

Was the problem too small a fillet radius where the bolt's shank joined the head? Notchy machining marks in that fillet? Did the edge of the copper washer under each bolt nick the softer fillet? Improper heat treatment? Yamaha sent out clear-anodized replacements that never broke, but there's no warranty on finish-second in the 200.

One maker had a problem with carbon accumulation in combus-

tion chambers, and in some bikes a chunk of that carbon could stick to an exhaust valve or seat, preventing that valve from closing properly. When a valve is "unseated" in this or in any other way (such as seat warpage or development of "negative valve clearance") it is robbed of its best source of cooling: full contact with the seat. Some heat does get conducted down the stem and into the valve guide, but the best cooling, by the shortest heat path, is into the valve seat via good contact. It doesn't take long for a valve in this circumstance to get really hot and for the flow of combustion gas to blowtorch a big section out of the valve. This kind of thing is rare today, kept that way by accurate mixture control, good cooling, and mature valve materials.

The legendary Yamaha TZ750 had a jackshaft that carried power from the middle of its twin, end-

**KENNY'S
BIKE BEGAN
TO LOSE
COOLING
WATER
AFTER
SUCH A
FAILURE,
FORCING
HIM TO
ACCEPT
SECOND TO
GIACOMO
AGOSTINI
IN THE
DAYTONA
200.**

to-end crankshafts over to the dry clutch on the right. The water pump and gearbox oil pump were driven by cross-axis gears from this shaft. The ignition rotor shaft was also driven from it but by large spur gears. Cross-axis gears operate with considerable sliding, since they are halfway to being worm gears. This made them vulnerable to wearing out unless actual gear oil (containing extreme pressure additive) was used in the transmission, rather than ordinary engine oil. The spiral teeth on the jackshaft simply wore away until there was no longer enough tooth height to drive the water pump, at which point the temp gauge spiked and the engine pushed out all its water. Replacing the jackshaft required splitting the engine, and few racers carried a replacement.

Adequate testing forces nature to show her hand before we play ours. **CW**

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Woburn
781.995.0834
MISSOURI
10897 Saint Charles
Rock Rd
Bridgeton
314.298.7222
NEW JERSEY
2052 Lincoln Hwy
(Rte 27)
Edison
732.248.7737
2070 East ROUTE
70, Cherry Hill
856.874.8766
65 Route 17 South
Hasbrouck Heights
201.257.5985
NEW MEXICO
5000 Cutler Ave NE
Albuquerque
505.830.4500
NEW YORK
137 N. Broadway
Hicksville
516.806.5918

388 Tarrytown Rd
White Plains
914.368.6974
NEVADA
344 S. Decatur Blvd
Las Vegas
702.877.4327
6280 S. Pecos Rd.
Las Vegas (E)
702.435.0635
NORTH CAROLINA
544 N McPherson
Church Rd
Fayetteville
910.860.8200
3916 E Franklin Blvd
Gastonia
704.824.1820
3407 High Point Rd
Greensboro
336.297.4250
11328 'B' East
Independence Blvd
Matthews (Ch)
704.846.0440
336 Tryon Rd
Raleigh
919.329.7858
OHIO
25102 Brookpark Rd.
North Olmsted
440.249.7591
OKLAHOMA
2717 Northwest Exy
Oklahoma City
405.842.0111
6701-A East 41st St
Tulsa
918.384.0608

OREGON
8930 S.E. Stark St
Portland
503.257.7047
180 Lancaster N.E.
Salem
503.589.1515
3137 Gateway St
Springfield
541.747.1575
PENNSYLVANIA
2229 Lehigh St
Allentown
610.791.9880
4848 William Flynn Hwy
Bedford
Allison Park
724.444.4260
3462 Paxton St.
Harrisburg
717.773.4324
160 Baltimore Pike
Springfield
610.328.9811
RHODE ISLAND
1400 Bald Hill Rd
Warwick
401.262.5037
SOUTH CAROLINA
817 St. Andrews Rd
Columbia
803.750.9294
2017 Wade Hampton Blvd
Greenville
864.322.6626
4400 Dorchester Rd
N. Charleston
843.974.6460
TENNESSEE
268 North Peters Rd
Knoxville
865.560.5657

1677 Gallatin Pike N
Madison
615.612.6234
6343 Summer Ave
Memphis
901.371.9692
TEXAS
10900 Gulf Fwy
Houston (A)
713.941.3364
9070 Research Blvd
Austin
512.302.0700
1424-F Airport Fwy
Suite 12
Bedford
817.545.7939
3032 Alta Mere Dr
Fort Worth
817.696.9700
10998 North Freeway
Houston (G)
281.448.3700
2301 N. Central Expy
Plano
214.473.8044
9975 IH-10 West
San Antonio
210.558.8700
7204 Southwest Fwy
Houston (S)
713.271.5201
UTAH
78 E T1400 S
Draper
801.553.2150
VIRGINIA
1547 E Little Creek Rd
Norfolk
757.480.5680
7000 Spring Garden Dr.
Springfield
703.940.0958

WASHINGTON
1210 Auburn Way N
Auburn
253.876.9999
4210 196th St SW
Lynnwood
425.640.3003
5727 East Sprague Ave
Spokane
509.535.4330
2501 S. 38th St
Tacoma
253.475.5444
11505 NE Fourth Plain
Road
Vancouver
360.253.8484
WISCONSIN
19035 W. Bluemound Rd
Brookfield
262.649.1999
4104 E. Washington Ave.
Madison
608.234.5153

Retailers

MINNESOTA
Bob's Cycle Supply
65 West Viking Dr.
St. Paul
651.482.8181
OHIO
Kames Sports Center
8516 Cleveland
Ave. NW
North Canton
330.499.4558

2016 Honda RC213V-S

'twenty-one, three-vee'

THE BEST-
HANDLING
SPORTBIKE IN
THE WORLD

By Don Canet





Honda has a rich history of

World Championship-winning technical achievement. It has also periodically offered the very best of its race-derived innovation for public consumption. Take the oval piston NR750 and exotic V-4 RC30 and RC45 models. They have fueled the aspirations of many if only fulfilling the fancy of the financially affluent few. It's been quite some time since we've witnessed such a collaborative flagship machine from Big Red and its Honda Racing Corporation, but the \$184,000 RC213V-S street-legal MotoGP replica has brought an end to this dry spell with all the subtlety of a major tsunami.

I was among four American moto-journalists in attendance at an international press ride of the exclusive machine staged at the Circuito Ricardo Tormo located in Valencia, Spain, and site for the MotoGP season finale. Upon arrival, the first thing I learned about the RC213V-S is the origin and proper pronunciation of its model name. "RC" is the prefix historically used to designate works machines built by Honda Racing Corporation (HRC). This dates back to the 1958 RC71 roadracer. The rest, "213V," is pronounced *twenty-one, three-vee* (as in 21st century, third version). The "S" designates Street.

I was also informed that we were to have two 15-minute track sessions aboard a European-spec bike with a claimed output of 157 peak horsepower at 11,000 rpm. If that doesn't sound anywhere near MotoGP engine performance, it isn't. This comes as the result of taking an engine platform wholly developed for racing and shackling it with an exhaust and engine management map that appeases government regulations. Worse yet, even stricter emissions requirements imposed upon the RC213V-S that's been certified for road use in the US further choke the 999cc V-4's peak output to a paltry 101 hp at 8,000 rpm. If it comes as any consolation for potential Stateside buyers, the Japanese domestic model has been neutered to 68 hp at 6,000 rpm.

To our delight, the day also included a pair of 10-minute stints on a bike equipped with Honda's accessory Sport Kit. This \$12,000 assemblage of performance goodies is the vital key to unlocking the full fury this Honda exotic has to offer, boosting claimed peak power in excess of 212 hp at 13,000 rpm. Along with various carbon-fiber bits, such as a cover that exposes the dry clutch, turn-signal removal plugs, and an airbox

inlet duct that replaces the headlight assembly, you also get an adjustable-rear-ride-height shock link, load-cell-type quickshifter rod, inverse (GP pattern) shift drum, and a comprehensive selection of final-drive sprockets. The kit also includes a datalogger set that records GPS speed, engine rpm, throttle position, bank angle, and more, along with an analysis software application.

Higher-friction Brembo race pads

and a remote front-brake lever adjuster cable are also included, but the meat of the matter is a replacement ECU, spark plugs, lower temperature thermostat, and titanium muffler set. The latter is said to have the same arrangement as that of the RC213V with no catalyzer or variable exhaust valve installed and offers a 10.6-pound weight reduction.

Calibrated for use with the ram-air duct and exhaust modification, the kit



ECU also enables additional features, including launch control used for race starts and a five-level shift lever pressure sensitivity adjustment of the load-cell quickshifter switch.

Unfortunately, American Honda will not be offering the “For Track Use Only” kits for sale, a stance that stems from its desire to be good corporate citizens and not abet owners desiring to ride a kit-

**“RC” IS THE PREFIX
HISTORICALLY USED
TO DESIGNATE WORKS
MACHINES BUILT
BY HONDA RACING
CORPORATION (HRC).**

ted RC on the street. History teaches us where there’s a will, there’s a way.

It was stated many times at the bike’s press intro that the goal of this project was not to deliver massive power but rather to provide a previously unrealized level of overall quality, chassis feel, and handling control. “We’re not aiming at a quality that comes from horsepower,” Honda V-4 Large Project Leader Yosuke



HONDA'S \$12,000 SPORT KIT IS THE VITAL KEY TO UNLOCKING THE FULL FURY THIS HONDA EXOTIC HAS TO OFFER, BOOSTING CLAIMED PEAK POWER IN EXCESS OF 212 HP AT 13,000 RPM.



Hasegawa stated. "Of course, horsepower is important, but of greater importance is precision. We wanted to replicate the precision that you have on a MotoGP bike."

And to that end each of the 250 RC213V-Ss slated for production are hand-built. "At the Kumamoto factory there is a special team devoted to the assembly and production of this very machine," says Shogo Kanaumi, acting development team leader for the RC213V-S, a man of great experience having served the same role on the RC211V MotoGP project. "It's not the same team used for the MotoGP bikes because each and every MotoGP bike has to be completely custom built, but they have one point in common in that they are both handmade."

As a fan of Grand Prix pre-dating the current four-stroke era, I had the particular honor of meeting, speaking with, and riding with RC213V-S lead test rider

Shinichi Ito, an accomplished former GP racer and highly respected development rider. "Impressive speeds and power specification does not win races," says the four-time winner of the prestigious Suzuka 8-Hour. "A slower machine can actually post better lap times if it faithfully responds to the rider's will. Honda MotoGP machines are developed with this in mind rather than impressive [power] specifications. The fundamental development philosophy is the ease of riding. I believe the 157 horsepower combined with the faithfully replicated chassis provides a riding feel that no other commercially available bike has ever realized. And the Sports Kit model truly feels like the RC213V."

Settling onto the thin seat pad and leaning forward, I found the cockpit has an authentic works racer appearance. The aluminum triple clamp has the keyless

appearance of the magnesium clamp of the GP machine. A Smart Key (proximity fob) encased in carbon fiber and aluminum allows the bike's electrical system to be activated with a thumb of the start button. A subsequent press initiates auto start—no need to hold the button down. The TFT dash offers a choice of street and circuit modes, the only difference being the digital speedometer is replaced with a lap timer in circuit mode. Ito-san led the way throughout our first session aboard the non-kitted bike.

I promptly killed the motor as I engaged the clutch to head off down pit lane, not anticipating just how tall first gear truly is. D'oh!

Once on the circuit, I was immediately impressed with the incredible smoothness and lack of vibration from the



meticulously blueprinted and balanced V-4 engine. Making this all the more impressive is that the race-based engine has no counterbalancer shaft. Clutch pull is super light, and the slipper/assist unit provides superb feel that belies my initial pit-road folly. Its close-ratio six-speed gearbox makes gear changes up or down with Swiss-watch precision that is unlike anything I've ridden before. The Quick-Shift was seamless, even when I briefly simulated a street cruise pace by changing up under mild acceleration to settle into a silky smooth 75 mph at 5,000 rpm in top gear. A few roll-ons in various gears from lower revs resulted in very linear delivery across the range building to a crescendo of added thrust over the final 2,000 rpm before tapping the 12,000-rpm rev limiter.

Directness felt between the twistgrip and rear tire gave a sense of tractability and control that is the ultimate expression of a standout Honda trait. I've often associated such refined connection with production CBR supersports over the years. Fueling is what I imagine perfection to be with instant, yet sensuous, throttle pickup. Five of the circuit's dozen corners were taken in low gear with a strong drive off the final corner netting an indicated 174 mph at the top of fifth down the main straight.

The real treat came following lunch when I climbed aboard the kitted bike wrapped in optional unpainted carbon-fiber bodywork. Once again Ito-san led the first session before I remounted for a final five laps on the day. The road-spec bike had been shod with Bridgestone Batlax RS10 tires, whereas the kitted bike wore race slicks of the same brand. Being the first rider in the rotation meant I had the duty of scrubbing in the fresh slicks. Discretion prompted me to begin in the Ride Mode 5 preset with default parameters of Level-3 power delivery, Level-8 TC, and Level-1 engine-braking control. This tamest of power setting tempers the ride-by-wire throttle response and restricts wide-open throttle valve rotation. There are nine levels of Honda Selectable Torque Control (TC) with a lower number having less intervention and four levels of engine-braking with Setting 1 offering the most compression effect. The five ride modes are simply memory presets that allow customization of the trio of parameters (while stopped) for on-the-fly mode changes while riding.

Following a lap easing the tires to the edge, I thumbed the mode button to

preset 1 (P1, T2, EB3) and left it there. The kitted bike's intoxicating exhaust note and substantial increase in acceleration caught me by surprise on the first full blast up the front straight, bumping the 14,000 rev limiter twice during the flurry of upshifts despite there being a sequential shift indicator light array above the bar-graph-style tachometer. Acceleration off low-gear corners had the front wheel beginning to loft while still completing the leaned-over exit, and electronic wheelie control maintained an angle of attack that allows a hard drive with the throttle pinned and a snick into the next gear before gently setting the front back down. This is the feeling we all live for.

No doubt the bar has been raised on the handling front. There truly is no production bike of any size, weight, or cost that instills the level of confidence I felt aboard the RC213V-S. Never have I ridden a production sportbike exuding such a high level of chassis precision and con-

trol. When Honda said the RC213V-S is the world's easiest machine to maneuver, it wasn't blowing smoke. Every aspect of the rider/bike interface is the epitome of refined performance. The Öhlins TTX25 fork and TTX36 shock support a chassis package blessed with presumably better mass centralization than what's possible on a normal supersport. Overall feedback, stability, and handling agility is superb. Braking hard from 184 mph into the sweeping first corner always felt absolutely composed, and the planted feel from the front encouraged trail braking far beyond my normal comfort level.

Riding the kitted RC213V-S provides a true sensation of what a MotoGP machine offers. But then, the only MotoGP bike I've ridden was the RC211V that Valentino Rossi rode to the 2002 MotoGP world title, a brief ride that took place at Japan's Suzuka Circuit years ago. Rusty recollection or not, I'm a believer. *CW*



CW TEST 2015 KAWASAKI NINJA H2

RIVER MARK of the BEAST





ON THE ROAD
WITH THE
KAWASAKI
NINJA H2



By **Mark Hoyer**
Photography by
Jeff Allen



Weird things you notice getting on the H2 and taking a ride for the first time:

The engine cranks longer than most new bikes before it starts. The idle has a loping growl, as though it is disinterested in that mode of operation. In certain light, the LCD information display is impossible to read. If you are 6-foot-2 like me, your hands are lower than your knees, like a sprinter ready to fire out of the blocks. The non-assist slipper clutch has a firm lever and great control.

Also, there is an ECO mode. The little icon pops up when idling along with the butterflies barely cracked, indicating the bike's most efficient operation, because there is nothing like saving the planet on a 190-hp supercharged motorcycle.

I admit to riding the bike with the ECO icon showing on rare occasion. But at part throttle, the engine pops, flutters, grunts, and coughs occasionally, and if an open road is in front of you, there is nothing to do on an H2 but devour it. And there is nothing more fun in life than rapidly changing throttle position on this bike. Apply full throttle in second or third gear and the explosion of force and acceleration will challenge your ability to comprehend such movement. The supercharger whistles and twitters and chirps when you manipulate the throttle in the course of riding, but rolling in deep sets the engine to its most favored and focused use.

ZX-14R? Hayabusa? Meh. Gruntier,

yes, but also somehow more flaccid feeling and also less agile. The H2 is just so *sharp*. Hammering this thing off the line is the only way to live. Well, it's one great way to live, especially with that killer clutch feel. But it's also amazing to waltz up to 8,000 rpm in third, two bars of boost showing on the dash (you think so, anyway), and roll it wide open for *ohmygodisthat132mphbeforemynextbreath?!*

Why, yes, yes it is.

Quickshift click fourth on this slick dog-ring trans without rolling off and note that the "Boost" intake temperature gauge is in the range of 250 degrees, which at the max boost of 20.5 psi ought to pressure-cook a whole chicken, or a certain breed of hawk, in very short order. Even tastier if you add a bit of liquid smoke. Aftermarket, we're talking to you.

That temp gauge gives you a good idea of the big action happening on the intake side of this powerplant. Compressing air causes it to heat, and when that billet-aluminum impeller zings up to its almost 130,000-rpm maximum, the experience gets heated in more ways than one.

Inevitably, I swapped to our Yamaha YZF-R1 long-term testbike and the Aprilia Tuono 1100 V4 Factory while we had the Kawasaki. After the H2, they both feel sort of cute in a straight line, yet both are work-class-fast motorcycles and not that far off in quarter-mile performance. The H2's time of 9.62 seconds and terminal speed of 152 mph put it among the fastest streetbikes we have tested, but the numbers don't convey the experience of rolling on the throttle on

the road. No other production motorcycle feels quite like this.

Olympic powerlifters are some of the most flexible, catlike athletes in the world, able to exercise extreme athletic force with a precision of technique to throw back-breaking, femur-crushing weight around with apparent ease. This isn't exactly how the H2 behaves on a winding road. Steering takes some effort. The bike, without gas, weighs 501 pounds. You always feel this when turning the bars while in motion.

An R1 will filet this H2 on a back road. The Yamaha slices and dices entries, apexes, and exits in a light and precise way that makes this H2 feel more Hummer than superbike. Don't misunderstand, the H2 feels good to ride

fast in corners—especially through big sweepers—and chassis feedback is really good, but you're sort of reveling in the circumstance of it all and really just setting any corner up (using excellent Brembo monoblock brakes) so that you may enjoy sighting your exit once again and exploding off the apex using your desired level of traction control. Which you should not turn off when intending to exit corners.

The KYB AOS-II Air-Oil Separate cartridge fork and KYB shock deliver top-quality damping with great control and supple, responsive action. It's a bit odd that electronic suspension, now prevalent on higher-end motorcycles, is not used here, but we were all thankful for the effective Öhlins electronic steering damper—the front wheel springs eternal,



THERE IS NOTHING MORE FUN IN LIFE THAN RAPIDLY CHANGING THROTTLE POSITION ON THIS BIKE.





and there is no drama setting it back down no matter how fast you're going.

But the big picture on the chassis is that it likes you to invest yourself in cornering and rewards a rider active in the saddle: hanging off, using good body position, and precise, decisive movements.

In slow corners, though, abrupt throttle response conspires to upset your precise, decisive movements. It's not just the initial hesitation either because all that "on-ness" in the engine room really gets the bike going in a too-thrilling way sometimes. This was engineering intent, as stated by a Kawasaki engineer to Don Canet on the initial launch at the Losail Circuit in Qatar (June). They were going for thrilling and they got it.

And, except in slower corners, most of the time I liked it. The 998cc inline-four has a kind of urgency and violence unlike any motorcycle I have tried. The 380-horse Hayabusa I once rode sort of swelled and then exploded with power, like most turbo bikes. Impressive, and overwhelmingly fast, but imprecise. That's the thing about the H2: It is violent, it does explode, but the combination of electronic aids, quality damping, and a chassis designed to function in this package puts it all in a box you can get your hands around, if not your head. It's like having a container that somehow holds the infinite universe, allowing you to peer in and plumb the depths of creation, yet you can keep a lid on the whole thing and hold it like a jewel in your hands. Too weird sounding? I'm telling you that the motorcycle will change how you think



**THE H2 LOOKS LIKE A
ROBOT EMBODIMENT
OF A DARK CREATURE,
GLISTENING WITH
SPARKLING, GREEN
BLOOD.**

about performance.

And it's not a bad streetbike for popping down to the shops. Engine heat is managed okay, the seat is pretty comfortable, and the ride is, you know, nice. The fueling issue can make the mellow riding experience a little herky-jerky sometimes, but, really, you could live with this bike every day. The old line *Cycle* editor Cook Neilson wrote about using fine scotch as paint thinner comes to mind.

How is it parked? I rolled the H2 into the yard, a good distance from my front patio so as to contemplate the motorcycle in the filtered late-afternoon light of a backlit sunset through oak trees. It's not pretty. It's much longer than photos portray. That single-sided swingarm ranges out behind, and, damn, look at all those links in the chain. (There are 118 versus 112 on a ZX-10R, for example). Even in sweet light like this, the H2 looks like a robot embodiment of a dark creature, glistening with sparkling, green blood.

It's a positive that it doesn't use any gasoline when parked. Fuel economy was pretty dismal, though I admit that we rode this bike very hard almost all the time. The lowest fuel mileage was 24.8 mpg, which with a 4.5-gallon tank means 111 miles to empty. It will feel like a long way if you do it a quarter-mile at a time. Other tanks were in the 30-mpg range. Of course, I can take this bike to task for this, but it must be noted that the Aprilia Tuono 1100 Factory also tested in this issue delivered an even more dismal 27-mpg average. Should we have called this the Low Fuel Economy Issue?!

For the notional \$25,000 entry fee for this 2015 model (notional because all H2s were sold last year), there is no other motorcycle like this. I was prepared to be let down because the spec of the \$50,000 H2R is significantly higher than that of this streetbike in terms of horsepower (310 claimed hp) and weight (49 claimed pounds lighter), but there is no disappointment in the H2 in terms of pure, brutal experience. There also is apparently no letdown for those people who have the money for one because Kawasaki said, "next model year units will be made available mid- to late summer," when the 2015 order period closed. But summer has passed and 2016s hadn't been announced.

The one thing for sure that let me know the H2 is one of the fastest, most intense motorcycles I've ever experienced? I spent all my time riding around with the turn signal on. **CW**



EDITORS' NOTES



BLAKE CONNER
SENIOR EDITOR

→ Sometimes a bike comes along that reprograms the brain and demonstrates what quick really means. The Suzuki Hayabusa and Kawasaki ZX-14R come to mind. The H2 is in this company. But then I recalled that our BMW S1000RR only makes 8 hp fewer, is 85 pounds lighter, and beat the H2 to 180 mph (admittedly with a race pipe). It turns out that the H2 has only joined the party but isn't really the guest of honor.



DON CANET
ROAD TEST EDITOR

→ Kawasaki has provided some of the more memorable thrill rides in the 25-year span I've worked at *CW*. One of my first assignments was testing the 1990 Ninja ZX-11, a bike that utterly blew my mind at the time. The first-generation ZX-10R was a handful on the road course, and the ZX-14R remains the quickest production bike I've tested in the quarter-mile. The Ninja H2 is keeping the grass green and the fire alive.



MARK HOYER
EDITOR-IN-CHIEF

→ What do you do with a 227-pound tank-full load capacity? That's what this highly focused sporting motorcycle's Gross Vehicle Weight Rating allows for in the saddle. I chuckled at this only a little because this is not a two-up motorcycle or one to throw saddlebags on, so it's understandable. So what would I do with a bike that has a 227-pound load capacity? Strictly speaking, I'd have to ride naked.

KAWASAKI NINJA H2

SPECIFICATIONS

GENERAL

PRICE

LIST PRICE:	\$25,000
IMPORTER:	Kawasaki Motors Corp., USA P.O. Box 25252 Santa Ana, CA 92799 kawasaki.com

CUSTOMER SERVICE PHONE:	(949) 770-0400
-------------------------	----------------

WARRANTY:	12 mo./unlimited mi.
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ENGINE & DRIVETRAIN

ENGINE:	liquid-cooled, four-stroke inline-four
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BORE & STROKE:	76.0 x 55.0mm
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DISPLACEMENT:	998cc
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COMPRESSION RATIO:	8.5:1
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VALVE TRAIN:	DOHC, four valves per cyl., shim adjustment
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VALVE ADJUST INTERVALS:	15,000 mi.
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INDUCTION:	(4) 50mm throttle bodies
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OIL CAPACITY:	4.7 qt.
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ELECTRIC POWER:	420w
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BATTERY:	12v 8.6 ah
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CHASSIS

WEIGHT

TANK EMPTY:	501 lb.
TANK FULL:	529 lb.

FUEL CAPACITY:	4.5 gal.
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WHEELBASE:	57.3 in.
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RAKE/TRAIL:	25.0°/4.1 in.
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SEAT HEIGHT:	31.8 in.
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GROUND CLEARANCE:	5.0 in.
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GVWR:	756 lb.
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LOAD CAPACITY (TANK FULL):	227 lb.
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SUSPENSION & TIRES

FRONT SUSPENSION

MANUFACTURER:	KYB
TUBE DIAMETER:	43mm
CLAIMED WHEEL TRAVEL:	4.7 in.
ADJUSTMENTS:	compression and rebound damping, spring preload

REAR SUSPENSION

MANUFACTURER:	KYB
TYPE:	single shock
CLAIMED WHEEL TRAVEL:	5.3 in.
ADJUSTMENTS:	compression and rebound damping, spring preload

TIRES

FRONT:	Bridgestone Battlax RS10 120/70ZR-17
REAR:	Bridgestone Battlax RS10 200/55ZR-17

PERFORMANCE

1/4 MILE:	9.62 sec. @ 152.01 mph
0-30 MPH:	1.2 sec.
0-60 MPH:	2.6 sec.
0-90 MPH:	4.2 sec.
0-100 MPH:	4.8 sec.

TOP GEAR TIME TO SPEED

40-60 MPH:	2.8 sec.
60-80 MPH:	2.7 sec.

MEASURED TOP SPEED:	183 mph
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ENGINE SPEED @ 60 MPH:	4098 rpm
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FUEL MILEAGE

HIGH/LOW/AVERAGE:	30/25/28 mpg
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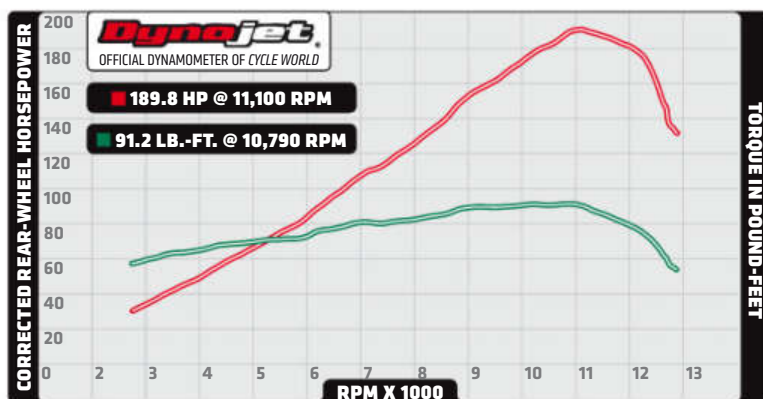
AVG. RANGE INC. RESERVE:	126 mi.
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BRAKING DISTANCE

FROM 30 MPH:	32 ft.
FROM 60 MPH:	124 ft.

SPEEDOMETER ERROR

30 MPH INDICATED:	29 mph
60 MPH INDICATED:	58 mph



Bored & Stoked

THUNDERSTRUCK ABOARD THE ITALIAN NAKED SUPERBIKE

By **Don Canet**

Photography by **Jeff Allen**

“Tuono” used to mean only “thunder” in Italian. But ever since Aprilia applied the name to its first stripped superbike—the 2002 Tuono, a less-faired RSV Mille—it has also meant kick-ass naked bike.

Every Tuono since the first has been massive fun and big thrills mixed with a dose of practicality rare at such a high level of performance.

A year ago we picked the BMW S1000R as the winner in our Year of the Naked issue (August '14). The then-new Bavarian bomber went up against an also-new KTM 1290 Super Duke R and a carryover Aprilia Tuono V4 R. And while there was much to love about the Tuono—a former CW Ten Best winner—we also pointed out a few areas in which the competition had gained an advantage in performance and comfort.

It would seem that ears were burning at Aprilia's Noale, Italy, factory while the crew worked on the next iteration of Tuono V4. Each and every nit we'd picked has been addressed with this 2015 Tuono V4 1100 RR







and Öhlins-equipped Factory models, the latter of which we've spent the past few weeks commuting and sport riding aboard. Competition in this class is killer, but I'm hard-pressed to think of a more soul-stirring sport naked than the Tuono. It dissects my favorite back roads with cutting-edge performance, electronics, and Italian flair with a greater degree of ergonomic comfort than any clip-on-wearing superbike.

Tuning refinements of the tri-map power modes and Aprilia Performance Ride Control (APRC) have coincided with what's undoubtedly the most tantalizing update: a substantial power boost that spans the entire power range from off idle to 12,000 rpm. While last year's 999cc engine didn't suffer from anemic low-end punch, when it was compared with the latest entries from BMW and KTM, it came up short against those big-power machines. As the adage goes, "There's no replacement for displacement," and Aprilia's 1,077cc (via a 3mm-larger bore), liquid-cooled, 65-degree V-4 offers proof. Rear-wheel horsepower and torque as measured on our Dynojet dyno show that the Tuono 1100 is now on par with the S1000R across its entire rev range and is endowed with bottom-end balls any street rider will appreciate. Whether pulling away from a traffic signal, rolling on the throttle in top gear to swing around a semi, or simply flowing through a canyon road at relaxed

revs with little need to row the six-speed gearbox, this newfound on-demand torque along with lower overall gearing (15-tooth countershaft sprocket replacing the previous 16) has made for an improved all-around road bike.

Departures from a stop require just a hint of throttle and linear clutch take-up as robust power right off idle propels the bike forward with super ease. Keeping pace with auto traffic and adhering to in-town speed limits reveals the one area in which the ride-by-wire fuel-injected engine leaves room for further improvement. We experienced a slight fluttery character with the fueling at cracked throttle that clears up once the twistgrip is opened beyond about 25 percent. If you ride around that, the problem then is you are ripping ahead in borderline exhibition of speed, such is the bottom-end snap at quarter throttle or more.

That fluttery throttle response also made it tough to execute smooth upshifts as a modest commuter-like pace. The quickshifter produces a fairly lengthy cut when making upchanges under a light load, a condition that is particularly noticeable when shifting from first to second and second to third. All too often this made for an unpleasant lurch when working up through the lower gears. There isn't a user menu option (instead requiring the dealer programming tool) to disable the quickshift feature, so we are left to fiddle with technique.

We found that a slight dip of clutch combined with a steady cracked-open throttle produced the best results. Even the slightest rollout of the throttle on the shift could cause an abrupt cut of power that botched the smoothness of the shift. It took focus, but getting it right proved very satisfying, albeit not nearly as gratifying as giving it some stick and reveling in seamless shift action and that invigorating exhaust note.

Escaping the city onto the interstate confirms that the counterbalanced V-4 has retained the silky-smooth nature of its smaller-capacity predecessor. Pushing an 80-mph freeway pace with revs nearing 6,000 rpm in top gear produces only subtle vibration felt through the grips, footpegs, and fuel tank with negligible increase in vibes as the analog tachometer needle sweeps toward the rev limit. Extended freeway stints headed to some choice Southern California back roads never left me feeling worse for wear. The taper-style handlebar is now narrower and the seat is 15mm lower, resulting in a sporty yet very natural riding position that felt ideally suited to my 5-foot-10 stature. The saddle has improved comfort over its predecessor, featuring softer foam that is said to resist hardening with age. The bikini fairing has also been revised to provide better aerodynamics and rider comfort that's evident in the absence of helmet-rocking wind buffet at freeway speed.

Toggling among the trio of engine power delivery modes can be done while riding. I found the difference between these modes more subtle than expected, as each has been programmed to deliver full power output. Sport mode, intended for everyday riding, provides slightly softer throttle response and the most engine-braking. Track and Race both share a more direct engine response and reduced engine-braking with Race mode having a further reduction in engine-braking at high rpm.

There are eight levels of traction control that can also be changed or turned off via a paddle switch on the left bar. A change to TC sensitivity is instantaneous and doesn't require closing the throttle. We not only found levels 7 and 8 good for wet roads but also a viable choice when working a technical downhill section of dry road. Settings 4–6 offered a good sense of non-intrusive safety for general riding while serious frolic on familiar sport roads warranted use of the minimal TC levels.

While there are also three levels of wheelie control and three levels of ABS, the bike must be stopped in order to access the submenu for adjusting either of these parameters. Driving hard out of lower gear corners with minimal TC and WC settings delivered unmatched excitement as the front begins to rise while still leaned over and consistently maintained a foot-high wheelie that would set down softly so long as you stayed on the gas. Turning off TC and WC allows unabated wheelstands, but be forewarned that while this hyper naked willingly paws the sky, achieving a sustained mono requires a steady throttle hand due to its startling power reduction when notching back the throttle.

Fortunately, aside from wheelies, that throttle sensitivity didn't hamper the superb feeling of connection between twistgrip and rear-tire contact patch when



DUCATI MONSTER 1200R

Is bigger better? Ducati seems to think so and has embraced such a design philosophy for quite some time now. Displacement creep has been a steady evolutionary theme of its superbike offerings with the current 1299 Panigale even having outgrown the capacity limits of sanctioned racing rules in pursuit of offering a superior-performing street platform. Even the flagship of Ducati's Monster family of sport naked models is bigger than ever with a 1,198cc Testastretta 11° V-twin engine. The Monster 1200 represents a gentleman's alternative to Aprilia's stripped superbike, trading circuit-derived performance for a more rounded package that provides greater comfort and general-use convenience.

working the Tuono's sharp-handling chassis down a serpentine road. Ride the meat of V-4 midrange torque or wring it out to the enjoyment of its unique aural soundtrack. The result is the same: swift, seamless, tractable acceleration from one corner to the next. In this setting the quickshifter works flawlessly as does the chassis as a whole.

The race-quality Öhlins fork and shock are well calibrated, having the golden quality of supple bump compliance yet also providing tactile feedback and solid chassis stability. Steering is light without any nervous twinge, and the front end gains your trust with a planted feel from turn-in through the apex. Stability under hard braking is augmented by a slipper

clutch, electronic engine-braking reduction, and Bosch ABS that works front and rear in each of the three modes. The different ABS settings tailor the intervention sensitivity and rear lift mitigation (RLM) strategy. Mode 3 is for wet roads, Mode 2 reduces RLM at higher speeds, and Mode 1 has no RLM. As with the other, ABS can also be turned off if you like it raw.

European manufacturers have led the charge in the naked superbike category, and bikes like the new Monster 1200R and the Tuono 1100 V4 Factory continue to keep the class fresh and interesting.

Do we have a new emperor without clothes? Maybe a heads-up battle is in order, as the Tuono certainly has the capacity and legs to run with the best. **CW**





EDITORS' NOTES



ANDREW BORNHOP
EXECUTIVE EDITOR, DIGITAL

→ First time on a Tuono, and I'm impressed. This naked Aprilia is totally sporty, yet it doesn't force my 6-foot-4 frame into a tucked position with legs uncomfortably bent. From the moment you fire up the DOHC V-4, the Tuono exudes Italian cool, and the electronics make the bike an easy all-weather commuter or a trackday fiend. As a big guy, I fit better on the naked KTM 1290 Super Duke, but it's a hammer whereas the Tuono is a scalpel.



DON CANET
ROAD TEST EDITOR

→ Of all the sport naked bikes I've ridden, none delivers as strong a sense of being aboard an actual superbike fitted with high bars, nor rival the sensations I get on the Tuono V4. This was true last year and even more so now with the engine's boost in power. If I had to decide on a single sportbike for multi-role use that also included the occasional trackday outing, this updated Aprilia resides at the top of my short list.



MARK HOYER
EDITOR-IN-CHIEF

→ Well aren't these stripped-superbike sporting standards just some of the most practical and fast all-rounders? As Bornhop points out, it's comfortable for us bigger folks (I'm 6-foot-2), and the bike is at the top of Canet's short list. But how does a bike like this get worse fuel mileage than a 190-hp Kawasaki Ninja H2? It recalls my 2004 MV Agusta Brutale 750 long-term bike, which averaged 24 mpg. Something in Italian water?

APRILIA TUONO V4 1100 F

SPECIFICATIONS

GENERAL

PRICE

LIST PRICE: \$16,299

IMPORTER: Piaggio Group Americas, Inc.
257 Park Ave. South, 4th Floor
New York, NY 10010
apriliauxa.com

CUSTOMER SERVICE
PHONE: (212) 380-4400

WARRANTY: 24 mo./unlimited mi.

ENGINE & DRIVETRAIN

ENGINE: liquid-cooled, four-stroke V-4

BORE & STROKE: 81.0 x 52.3 mm

DISPLACEMENT: 1077cc

COMPRESSION
RATIO: 13.1:1

VALVE TRAIN: DOHC, four valves per cyl.,
shim adjustment

VALVE ADJUST
INTERVALS: 12,400 mi.

FUEL DELIVERY: (4) 48mm throttle bodies

OIL CAPACITY: 4.2 qt.

ELECTRIC POWER: 450w

BATTERY: 12v, 9.5 ah

CHASSIS

WEIGHT

TANK EMPTY: 441 lb.
TANK FULL: 472 lb.

FUEL CAPACITY: 4.9 gal.

WHEELBASE: 57.0 in.

RAKE/TRAIL: 24.7°/3.9 in.

SEAT HEIGHT: 32.9 in.

GROUND
CLEARANCE: 4.4 in.

GVWR: 884 lb.

LOAD CAPACITY
(TANK FULL): 412 lb.

SUSPENSION & TIRES

FRONT SUSPENSION

MANUFACTURER: Öhlins
TUBE DIAMETER: 43mm
CLAIMED WHEEL TRAVEL: 4.7 in.
ADJUSTMENTS: compression and rebound
damping, spring preload

REAR SUSPENSION

MANUFACTURER: Öhlins
TYPE: single shock
CLAIMED WHEEL TRAVEL: 5.1 in.
ADJUSTMENTS: compression and rebound
damping, spring preload

TIRES

FRONT: Pirelli Diablo Supercorsa
120/70ZR-17
REAR: Pirelli Diablo Supercorsa
200/55ZR-17

PERFORMANCE

1/4 MILE: 9.89 sec. @ 140.18 mph
0-30 MPH: 1.2 sec.
0-60 MPH: 2.6 sec.
0-90 MPH: 4.3 sec.
0-100 MPH: 5.1 sec.

TOP GEAR TIME TO SPEED

40-60 MPH: 2.8 sec.
60-80 MPH: 2.6 sec.

MEASURED TOP SPEED: 160 mph

ENGINE SPEED @ 60 MPH: 4541 rpm

FUEL MILEAGE

HIGH/LOW/AVERAGE: 29/21/26 mpg

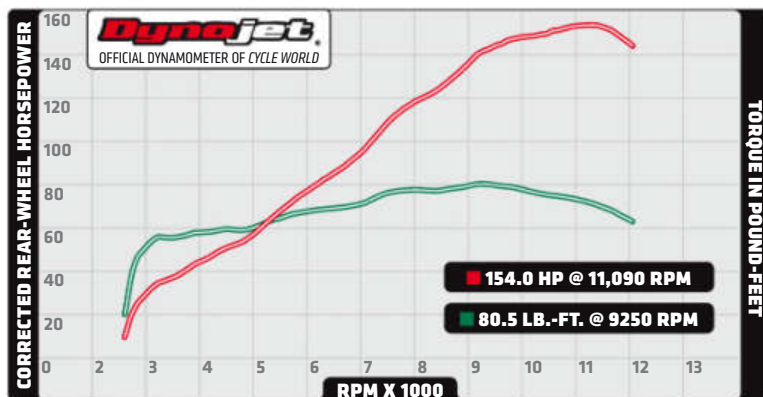
AVG. RANGE INC.
RESERVE: 127 mi.

BRAKING DISTANCE

FROM 30 MPH: 29 ft.
FROM 60 MPH: 115 ft.

SPEEDOMETER ERROR

30 MPH INDICATED: 30 mph
60 MPH INDICATED: 60 mph



Designed in California. Built by Scorpion.



SCORPION HI-VIS

EXO-T1200HELMET

High-Viz yellow "Alias" graphic
TCT® composite shell
AirFit® liner system
Everclear® No Fog face shield
3-step retractable sun visor
Corn system speaker pockets
Emergency release system
Retail \$359.95



YOSEMITEJACKET

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Removable Sas-Tec® CE armor
NightViz® reflective accents
Windproof mid-weight nylon
Removable waterproof and thermal liners
Internal venting panels
Torso and arm venting
CE viscoelastic armor
Pants connectable
Retail \$389.95 / \$404.95



45-110



Water
Proof

COOLHAND IIGLOVES

High-Viz yellow breathable mesh
NightViz® piping
Leather palm
Molded knuckle protectors
Flex-stretch finger panels
Molded wrist closures
Retail \$34.95



75-100

 **SCORPION**
EXO.

TRIUMPH
REMAKES
ITS MOST
SUCCESSFUL
MODEL LINE TO
PUSH ITS PAST
FARTHER INTO
ITS FUTURE

By *Steve Anderson*

Look

at the new Triumph Thruxtons, and you see thoroughly updated modern classics, machines that embrace the appearance and aesthetics of café racers that were new a half-century ago. But if you look hard enough, you can also see something else: The new Triumph Motorcycles Ltd, John Bloor's Triumph, embracing the heritage of the defunct Triumph Engineering Company, the original Triumph, in a way that it has never done before.

Baby boomers still remember when Triumph's Bonneville was *the* superbike. The 650cc pushrod twin got its name from setting speed records on Utah's famous salt flat, and it was arguably the fastest production motorcycle of its day. It inspired Harley to bring out the Sportster, it won the top English production class race (the Thruxton 500), it eventually won the Isle of Man production class race at record speed, and its engine propelled Gary

Nixon and Gene Romero to American half-mile and mile dirt-track wins and AMA championships.

But the company that produced the Bonneville ended ugly. Through mismanagement and intense Japanese competition, BSA-Triumph went into receivership in 1972 and was acquired with

conservative government assistance by Norton-Villiers, forming Norton Villiers Triumph (NVT). Plans to consolidate the Triumph Meriden plant led to a strike and a two-year occupation of that plant, which would in the end result in a worker's cooperative (the Meriden Cooperative) producing Triumph motorcycles. It

was a faltering, underfunded effort during a time Britain seemed a lemming headed for an industrial cliff. The Meriden Cooperative went bankrupt in 1983, and successful real estate entrepreneur John Bloor bought the rights to the Triumph name from the courts.

But he and his team wanted

2016 Triumph & Thruxton



2016 TRIUMPH THRUXTON R

h Thruxton

R



2016 TRIUMPH THRUXTON

almost nothing to do with the old Triumph, which represented to them all that was wrong with British industry: antiquated technology, under-investment, mismanagement, and perpetual labor wars. The new motorcycles that Bloor's Triumph was to develop were very Japanese in design (some of the first

products were 1,000 and 1,200cc DOHC fours) and included gearboxes and other components sourced directly from Japanese suppliers. The new Triumph Motorcycles made little attempt to secure historic bikes from the old Triumph: They were so much rubbish, better to be forgotten as quickly as possible.

But a funny thing happened over the years. New Triumph succeeded when it built machines that were more like those of the Old Triumph. The big fours went out of production, but the Triple grew into the Speed Triple and the Daytona, harking back to the 1970 Triumph Trident. The Japanese-clone 600cc four

faded almost before it was released, but the 675 triple has sold well. And the 790cc and 865cc "heritage" twins, the Bonneville and Thruxton and others, have been extremely well received, so well that they're approaching 50 percent of the Triumphs sold in the United States.

So four years ago, seeing the sales figures and hearing nudgings from the national distributors, people who remembered when Triumph had more than half the US market for large motorcycles, new Triumph got serious about the heritage twins. Miles Perkins, head of brand management for Triumph, describes the goals of the new project: "We wanted to maintain the iconic character [of the twins] while enhancing beauty, quality, and detailing and elevating performance and handling." He goes on to explain that they wanted the new twins "to have the capability of a truly modern motorcycle."

The project's styling focus was set as the 1968 Bonneville, the most iconic of the classic British twins. That made one part of the project tough. The original 650 Bonneville had grown from a 500cc engine design. To achieve the performance desired of the new machines was going to take much larger displacements: 900cc for the base model and 1,200cc for the Bonneville and Thruxtons. Stuart Wood, chief engineer for Concepts at Triumph, says of it: "First, we wanted to bring the overall engine silhouette and package down to a cleaner profile that was much closer to the engines of the late '60s. This was a real challenge, as these bikes literally had fewer components. Secondly, we were looking to bring more of the iconic details and features of the original engines into the design, such as the signature



right-side inspection panel, twin throttle bodies on the 1200s, and engineered external cylinder head bolts." The head of the engine design project, Rob (Triumph does not release full names of anyone other than chief engineers), continues: "The styling was so important and of such high value to the aesthetics that most of the cues came in right at the start of the engine design work. Particularly key were the overall proportions and height of the engines, which impacted the fundamental parts like pistons, con-rods, crankshafts, and so on. We really wanted the engineering to have traditional values, which gave the original engines the distinctive looks that they had—this was quite unique for the team where the ambition for per-

fect engineering would typically drive the development decisions—where we might say: 'We can't have a noticeable tooling split line.' We were actually going: 'No, it's a genuine casting that must have obvious tooling split lines'—we obviously need to make them good and make them look right."

You have to look no further than the cooling system to see the lengths to which Triumph went to make the machines look right. While the engine is conventionally liquid-cooled, with full water jackets around the cylinders and valve seats, it is finned as heavily as an air-cooled engine, and the fins actually provide significant cooling, allowing a smaller radiator. Water is routed internally in the engine to two central ports, right on

the bike centerline, that plug directly into a skinny radiator in front of the engine that masquerades superbly as an oil cooler. The radiator cap is remote and hidden. You have to look hard to find the fan hiding low on the radiator. No one has built a water-cooled bike that has more successfully masqueraded as its air-cooled predecessor.

Similarly, the exhaust system was designed to look as if the headers run straight back to the mufflers, with the same bends as used five decades ago. However, the headers invisibly divert to a chamber with catalytic convertor under the engine and back out again, with a chrome cover panel, giving the very convincing illusion of straight-through pipes.

When it came to the two

Thruxton models, the intent was to make them look more like the customized, café racer derivatives of the Bonneville that roamed English tracks and London cafés in the '60s, instead of the only mildly modified Bonneville of the previous Thruxton. As Perkins notes, "You can go to the National Motorcycle Museum and see rows of these machines with the long contoured fuel tanks of the day." According to Wood, "With the looks of a classic café racer and the geometry and capability of a completely modern motorcycle, we set the ambition for the Thruxton to be the most desirable modern classic sports bike in the world."

So both Thruxtons got a long, contoured tank that looks as if it could have been

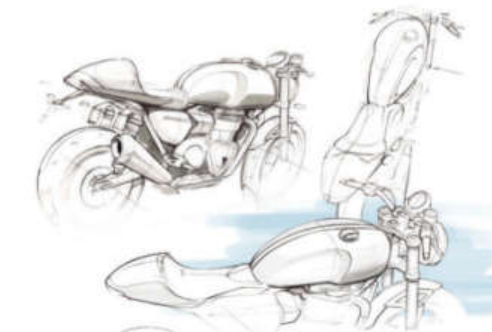
2016 TRIUMPH THRUXTON



2016 TRIUMPH THRUXTON R



made by Colin Seeley in 1967, a tank with the first Monza-style cap seen in ages, artfully designed to be acceptable to modern safety sensibilities. Both received a large-section aluminum swingarm, for the increased stiffness and handling improvements that brings. And both received a special, low-inertia, high-compression version of the new 1,200cc engine. Its 270-degree crank was lightened relative to that of the regular Bonneville and T120, for quicker throttle response. The compression increase and a freer-flowing airbox produce a high and very smooth torque curve, one that Triumph claims peaks at 80 pound-feet at 5,000 rpm, a huge jump from the previous model. More impressive was the breadth of the curve that was briefly flashed on screen at the press launch, with torque staying within 10 percent of peak from 3,000 rpm almost to the 7,000-rpm redline. If that holds for pro-



duction, the stock Thruxtons will approach the 100-hp level. A new slipper/assist clutch, though, allows that power to be transmitted to a six-speed gearbox while requiring only a light lever effort, reduced below that of the less powerful and smaller-displacement previous generation.

The Thruxton R gets some serious upgrades from the standard bike, both cosmetically and functionally. The top triple clamp is polished, gleaming aluminum, with soft rounded edges that look as if it came right off a classic machine. For improved suspension performance, a

Showa Big Piston inverted fork was fitted at the front and Triumph-unique Öhlins shocks at the rear. Braking at the front is by Brembo monoblock calipers acted on by a Brembo master cylinder, and while the tire sizes are the same as the standard Thruxton (120/70-17 and 160/60-17 front and rear, respectively), the R receives extra-sticky Pirelli Diablo Rosso Corsa tires.

On both machines, the old mixes with the new. Very classic aluminum instrument housings encase fully electronically controlled instruments, and both have traction

control that can be turned off on the fly via switches on the hand controls. All of the new heritage twins come with ABS, but the Thruxtons also get three levels of engine response tuning: Normal, Sport, and Rain.

Throughout the preview of the Thruxtons, Triumph personnel emphasized the goal with these machines was to make them more powerful, more capable, and more beautiful. The last is easily demonstrated by photographs, and the first two are promised by the specifications. We can't wait to ride them for confirmation. **CW**



2016 TRIUMPH THRUXTON R

ORIGINAL THRUXTON 500 RACER



2015 YAMAHA YZF-R1

CAN WE MAKE THIS TEN BEST WINNER BETTER?

When we first got a chance to throw a leg over the 2015 Yamaha R1 at the bike's press launch at Sydney Motorsports Park in Australia, it was pretty much love at first ride. This was only reinforced when the "M" won the track portion of our September Turn & Burn shootout and then backed it up with a Ten Best award.

So the R1 was an ideal candidate for a long-term evaluation. Instead of choosing the \$5,500 more expensive R1M, we decided the standard R1 would offer more aftermarket opportunities.

At the top of our list, we wanted to increase power to compete with the BMW S1000RR and clean up the mapping a bit. So far, we've tried out a CARB-legal Yoshimura slip-on exhaust from Yamaha, but while this \$699 accessory might look trick, it offers little in the way of performance improvement. Then we

tried Yosh's closed-course-only Race Series Alpha 3/4 system stainless-steel/carbon (\$799) that eliminates the R1's catalytic converter; while it didn't improve power much, it drastically reduced the weight by 9 pounds.

We'd heard great things about Flash Tune's (ftecu.com) mail-in flash service (\$200) for the stock ECU. But we wanted to be hands on, so we ordered the company's Bench (\$460) and Data-Link (\$380) ECU flashing kits and did it ourselves. The results were very impressive; with the flash and Yoshimura Alpha pipe, we picked up 8.3 peak horsepower (for 175.7 at the wheel) and about 2 pound-feet of peak torque. More impressive are the massive gains between 4,200 and 8,200 rpm. We'll talk more about the rideability in our next update, but fueling has been cleaned up dramatically, especially in the formerly herky-jerky Power 1 mode.

Since we had Flash Tune on the horn,

we also requested its Auto-Blipper Clutchless Downshifting kit (\$800), which provides a feature the 2015 R1 should have stock, in our opinion. Thus far, the system is the equal of, if not better than, BMW's.

After 2,700 miles, our rear Bridgestone RS10R tire was smoked, but the front was in great shape. To be fair, the rear tire had a hearty battle with our Dynojet dyno, and the drum won—our fault, as we didn't tie the rear of the bike down adequately. Pirelli Diablo Rosso Corsa (\$323) tires in the stock sizes were fitted. Even better, we ordered two sets of Michelin Power Slick Evo tires (see your Michelin race distributor for pricing) to mount to our spare set of wheels for trackdays.

Also with trackdays in mind, we ordered Yosh's case savers (\$299), rear axle blocks (\$74.95), Works Oil Filler Plug (\$29.95), and Race Stand Stoppers (\$33.95).

The fun has just begun. —Blake Conner

YAMAHA YZF-R1

Total miles	⌚	1959
Next service	⌚	4000 miles
Maintenance costs (including tires)	⌚	\$445.94
Repair costs	⌚	\$0
Average fuel mileage	⌚	32 mpg
Price as tested (2014)	⌚	\$16,490

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Service

BY RAY NIERLICH



Fill 'er up with ethyl? Or what about just plain old regular leaded gasoline? Reader Rich Birbiglia wants to feed his Virago 920 a proper diet.

VIRAGO SIN PLOMO? NO PROBLEMO.

Q: I just picked up a beautiful 1982 Yamaha Virago 920 with under 10K miles. After putting 2,000 miles on it, I noticed the inside of the side cover calls for leaded regular. I know older BMWs need the valve seats changed for unleaded, but it never occurred to me that a 1982 bike may need it done also. My question: Do I need to add lead to the gas, or can this bike survive with unleaded? And what year in general were Japanese bikes unleaded compatible?

*RICH BIRBIGLIA
CLIFTON, NJ*

A: Japanese bikes have never had any problems with unleaded fuel. Your Virago will run until the next millennium on unleaded. You are correct that air-cooled BMWs had a bit of trouble with unleaded fuel up through the 1980s. Valve clearance would disappear. The earlier engines would wear out the seats, but after 1981 (and a change to a harder seat material), the valves went away instead. Then BMW changed from 45- to 30-degree seats to give a wider area for better heat transfer. Problem solved, right? Not exactly. The shallower seat angle wore out valve guides quickly. BMW decided better cooling for the heads was the way out of the box, and now we have the "Oilhead" generation. By the way, "lead" additives haven't had real lead in them since the EPA banned the stuff in 1996.

CHEAP FIX, PLEASE

Q: My 2005 Honda ST1300 (ABS) with 148,000 miles on it has started to act up. I am getting a complete interruption/hesitation in power at exactly 4,250 rpm when the throttle is closed or very close to closed. If I happen to try to open the throttle at this very specific rpm, there is a bog and a bucking before it catches and then accelerates smoothly. The weird thing is that the tachometer needle will dip suddenly, sometimes all the way to zero, in sync with the hesitation. If I accelerate to above 4,250 rpm, close the throttle, and let the bike decelerate

back through 4,250, the tach goes nuts (drops/dips, again sometimes to zero for an instant) for a moment and then becomes steady again once through that rpm. Since the bike is in gear while decelerating, there's no way the engine rpm are actually jumping about like that. The problem will occur in any gear, just has to be 4,250 rpm and a closed or barely cracked throttle. There are no error codes in the computer, and except for this issue the bike runs perfectly. I pulled and cleaned the ECU connectors, tested the ignition coils, and the throttle position sensor. I have traced the wiring harnesses for signs of abrasion or damage and found nothing amiss. I'm hoping for a cheap fix.

*JEFF BERTRAND
CYCLEWORLD.COM*


A: Aren't we all! The vital clue here is the tachometer going nuts at the precise time the hesitation occurs. The tachometer signal is being interrupted when the fault occurs. This is going to be repetitious, but I can't stress it enough, check the grounds first! Don't assume they are okay because they look okay. Pull every ground, inspect closely, wiggle and pull on the eyelets to check for breaks in the wire next to the eyelet. If proven okay, clean it and refit it tight. If you're not 100 percent sure the relevant ground is good or it is too hard to access, run a separate jumper wire in parallel for a new ground, just to test.

Next, check the harness connectors from the main harness to sub-harness and also the gauge connections. It is possible that at 4,250 rpm there is a particular harmonic vibration causing your symptoms.

RE-TIRED CHIEF

Q: I have a 2000 Indian Chief and have been using a Metzeler ME880 tire. Can I run an ME888?

*LARRY LONG
CYCLEWORLD.COM*

A: Yup. Metzeler says the ME888 is replacing the ME880. And good news: Metzeler says the ME888 will be a longer-wearing tire. 



BEST USED BIKES
**H-D DYNA SUPER GLIDE
T-SPORT**

YEARS SOLD: 2001-2003
MSRP NEW: \$14,720 ('01) to \$15,370 ('03)
BLUE BOOK RETAIL VALUE:
\$7,940 ('01) to \$8,570 ('03)

BASIC SPECS: Based on the Dyna Super Glide platform, the T-Sport is powered by the rubber-mounted Twin Cam 88, an air-cooled 1,450cc OHV V-twin using a single 40mm Keihin carb and a five-speed transmission. The sport-minded chassis features triple-disc brakes, damping adjustable fork and shocks, 28-degree steering head angle, and a 62.9-inch wheelbase. The 19/16-inch mag wheels came fitted with touring-oriented bias-ply Dunlop D401s. Peak rear-wheel power output was 61 hp and 74 pound-feet on the CW dyno, and wet weight was 683 pounds with the 4.9-gallon fuel tank topped up.

WHY IT'S DESIRABLE: The Motor Company's take on sport-touring, the T-Sport is essentially a Super Glide Sport equipped with a fork-mounted fairing featuring height and tilt adjustability, a more deeply padded saddle, and Cordura-nylon detachable saddlebags. When the bike was introduced in late 2000, we immediately put our long-term T-Sport's travel capabilities to the test. "One of my most enjoyable rides last year was from Sturgis, South Dakota, to California via Utah aboard the T-Sport," remarked then Editor-in-Chief David Edwards. "Maybe Harley's best-kept secret, it's the perfect bike for the Great American Tour."

THE COMPETITION: The versatile T-Sport was discontinued after three years of production. During that time, the BMW R1200C Montana was the only other sport-inspired cruiser that came with touring essentials as standard factory-installed equipment.



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Race Watch

THE VIEW FROM INSIDE THE PADDOCK



THE FUTURE

MotoAmerica: Looking back to look ahead

By Kevin Cameron



The first year of

MotoAmerica as America's premier motorcycle roadracing series has ended, and participants and management alike seem pleased.

Even that master of grumbling and complaint, team owner/publisher John Ulrich, said the new series is worlds better than what it replaced. Even when making suggestions or, yes, while complaining, he said: "I felt that we were both on the same side."

People are also pleased by the presence of three-time 500cc GP champion Wayne Rainey as one of the four directors. The others are: Chuck Aksland, who after keeping Kenny Roberts' teams running was operations director at the Circuit of The Americas [COTA]; Terry Karges, executive director of the Petersen Automotive Museum; and Richard Varner, who loves Velocettes and achieved success in coastwise cargo operation by tug-and-barge combinations.

DMG [Daytona Motorsports Group], the previous series, took the old view that goes something like this: "Superbike is an American invention, and Europe adopted it. If we say superbikes will become 600cc, by golly those Europeans will adopt that too. We are the leaders." Enough little things were kept different about US Superbike rules to make it difficult for US riders to compete abroad or vice versa.

US racing shrank back to its club-race beginnings under DMG management. The Daytona 200, once the worldwide Big Race that started every season with a bang, dwindled into a clubman's Saturday 600 event, while European-style GP racing expanded to attract riders and spectators alike.

What MotoAmerica has done is to reconnect US national racing to the international scene with "globalized rules." The factories love this; when a bike is homologated for World Superbike, it is automatically homologated for MotoAmerica. No, you don't have to retune for some special, USA-only throttle body or quirky cam rule. Race parts can be sourced in larger numbers at volume prices. This helps everyone.

American riders are thinking internation-

RAIN, RAIN, GO AWAY:

Here, Roger Hayden on a Yoshimura Suzuki GSX-R1000 leads the Superbike/Superstock 1000 field at a drenched Road Atlanta.



2015 CHAMPION: Cameron Beaubier won eight races and the inaugural Superbike title.



UNPRECEDENTED:

Yamaha won every MotoAmerica race in the four classes for which its bikes were eligible. In Supersport, Bobby Fong on the Latus Motors Triumph regularly battled for podium positions.

ally, so DMG's stated policy of "keeping 'em home" never could have worked. Racing has become a worldwide scene. The competition I saw at MotoAmerica's season finale at New Jersey Motorsports Park was close and exciting, but the ideal is to have what British Superbike and the Spanish CEV series have: large numbers of riders pushing up through the ranks to form the

over dislikes and loyalties. They brought in an English team who knows from experience the value of decisive and correct action, not the "old way" of retreating to the Goodyear Tower "for a meeting" while weather made all the decisions. At COTA, the new management held the start until it could declare a wet race. Memos are circulated to all, and they are signed (that is, someone takes responsibility).

Richard Varner knows that factories and teams have been monitoring MotoAmerica all year. America remains a major market, so BMW, Ducati, Honda, and Kawasaki have all, in some sense, marked their dance cards. Will they step onto the floor next year? Varner said, "Everybody wants to go to a dance, but they want to be sure there'll be a band."

It's good to feel that US racing is back in competent, sympathetic hands. It's good to talk with team managers and crewmen who are optimistic. But in the world we now inhabit, beneficently renting racetracks and importing experienced officials is only a beginning. To succeed in the long term, motorcycle racing has to become a business that pays its own way. This idea has a long history.

AMA muddled through the opportunity-filled 1970s when US motorcycling was huge. Each time racing people in the organization acted to manage or further it, conservative trustees saw meddling by "city slickers." Many an initiative was neutralized by 1930s thinking. A step forward was taken in the 1980s by tapping into the experience and professionalism of the newly powerful club-racing scene. Roger Edmondson and his energetic Championship Cup staff improved and standardized AMA race operations. Edmondson also imported his new "Supersport" racing classes. These recognized that four-stroke production bikes had become raceable with only the simplest of modifications. Supersport was a revolution in racing because it armed privateers with plentiful and affordable bikes.

This era ended in a lawsuit when AMA fired Edmondson but retained his creation: the Supersport classes. Edmondson sued and won a substantial judgment that the AMA could ill afford.

When gradual changes in the AMA Board of Trustees made it possible, a separate, for-profit organization was created to manage racing: Paradama Corp. At



FOCUSED ON THE TITLE:

After 18 races, 22-year-old Cameron Beaubier won the Supersport title by just four points over good friend and Graves Yamaha teammate Josh Hayes. A perennial series champion, Hayes captured 10 wins this year to Beaubier's eight.

competing groups at the front who rapidly learn from each other to become fast and smart.

Teams need to know what's going to happen and that decisions will be made fairly. When I spoke with Aksland, he said they weren't able to find an experienced race director in America, only ex-team members with left-

NO MORE INDY:

MotoAmerica raced with MotoGP and World Superbike at Circuit of The Americas, Mazda Raceway Laguna Seca, and here at Indianapolis Motor Speedway. Sadly, the series will not return to The Brickyard in 2016. Here, Roger Hayden on a Suzuki leads the Yamahas of Hayes and Beaubier.



TELEVISION IS THE NECESSARY KEY TO US RACING'S FUTURE AND ALWAYS HAS BEEN.



last it appeared that motorcycle racing in the US could act in its own behalf, without interference.

Not so fast. AMA now decided Paradama had committed "improprieties." They voided that corporation, took racing back in-house, and carried out a wide-spread purge of persons with

racing or Paradama connections.

Having lost membership and a large amount of money, AMA wanted out of racing, an activity it had never understood. Members of the former Paradama group and others sought to "buy or otherwise acquire" AMA Pro Racing, but the transfer predict-

ably went to Daytona Motor-sports Group (DMG), created under the umbrella of Daytona (International Speedway Corp.). Many in the Daytona paddock that first year expressed the certainty that, "NASCAR can't fail. This is going to work. These people really know racing."

At essentially the same time, the US economy faltered in a big way. DMG's aggressive policies—based on a fundamental misinterpretation of how NASCAR's founder Bill France Sr. had operated—resulted in Honda and Kawasaki leaving the series. What had been broken was not mended by a following DMG reorganization and Edmondson's admission that, "I underestimated the importance of the factories to racing." Racing continued, but almost no one was happy. Honda and Kawasaki stayed away. How long could this standoff continue? Yet, as some pointed out, Jim France could, if he pleased, afford to keep AMA Pro Racing going indefinitely. He is a genuine enthusiast, so

**YOUNG GUNS:**

MotoAmerica introduced an entry-level spec class, the KTM RC 390 Cup, for riders 14 to 22 years in age. Northern California's Gage McAllister, a Supermoto ace, took the title.

the situation cannot have pleased him. A fresh start was needed.

That fresh start is MotoAmerica, but competent race direction is only a beginning. Television is the necessary key to US racing's future and always has been. Teams need sponsors, but sponsors require exposure. Can road racing get on screen by sheer merit, competing with celebrity mud wrestling? Can live Internet streaming give a leg up? Or must a sport of limited size like ours buy its way onto the small screen? This has been bike racing's big question ever since AMA's accidental success in the early 1970s—we've never quite made it.

This is the classic predicament of the small corporation. To move forward, it needs access to capital. We motorcyclists have always been sure our sport could and must reach a wider audience, but that question remains open.

There is a lot of competition for viewers.

MotoAmerica's choice of classes draws in new talent at the bottom through Supersport and the new, more accessible KTM RC 390 Cup class. The press conference remarks of class winners at New Jersey showed that these people are already international in both experience and outlook. I listened to conversations in which young riders described learning overseas circuits through online game simulations. Their on-track education will soon supply what is presently lacking in Superbike—depth of talent. British Superbike and the Spanish



CEV series show how effective this process is at creating the stuff of future champions. US racing can draw on a much larger population of potential riders than either Britain or Spain, so with continuing good management we can hope to add some fresh names to the existing list of American MotoGP and World Superbike champions. **CW**

COMMAND PERFORMANCE:

Jake Gagne (32), on the RoadRace Factory Orion Yamaha R1, won 13 of 18 races and the 2015 Superstock 1000 title. Superbike and Superstock 1000 race together but are scored separately.

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